

G11AP20201

National Geological and Geophysical Data Preservation
For Kentucky 2011

Richard A. Smath

Kentucky Geological Survey
228 Mining and Mineral Resources Building
University of Kentucky
Lexington, Kentucky 40506-0107

859.323.0503
859.257.1147
rsmath@uky.edu

09/17/2012

Submittal date of final technical report

Abstract

The objectives of this grant were 1) to digitize (scan) paper records of daily continuous ground motions in Kentucky collected by thirteen seismic stations between 1991 to 2001; 2) to transfer seismic data from obsolete computer magnetic tapes to a modern electronic format; and 3) to create a detailed inventory of hand-written geologic field notes and mylar field maps from the KGS-USGS cooperative mapping program conducted between 1960 and 1978 in preparation for conversion into electronic formats for the future.

Results

44,038 paper records of daily continuous ground motions have been scanned to digital Tiff? format and can now be made available online as archival records that can be viewed to facilitate the assessment of the seismic hazard potential of a region before a bridge, road, or business site is developed.

The magnetic tapes of seismic profiles were donated to the Kentucky Geological Survey, but the ability to read them no longer existed. The conversion of all the magnetic tapes to a modern format was accomplished by a company in Ohio. This is a significant monetary savings for the commonwealth because the current-day replacement cost to re-acquire these data sets is up to \$20,000 a mile and the magnetic tapes had an equivalent of about \$500,000 worth of geophysical data.

Geologic field notes and field maps were inventoried at two main locations. The field notebooks are at the USGS library/field records collection division in Denver, CO., and the geologic field station mylars are at the Kentucky Geological Survey core facility. Some copies of the geologic field notebooks were at the Kentucky Geological Survey. 77 notebooks and 267 field station mylar maps were scanned. Some of the GQ field notebooks were written with a No. 2 pencil and are very light. These light images can be somewhat enhanced in Adobe photoshop. Some of the GQ field notes were needed for current research projects and others are needed because they were in Kentucky's Fluorspar District and contained detailed descriptions of mines and cores that will be useful to the Kentucky Geological Survey's industrial mineral web site. This is also an added benefit because with new interest in Kentucky's Fluorspar district it will eliminate the need to evaluate sites that are no longer accessible. The descriptions in some of these field notebooks are providing information to new mapping grants such as the unconsolidated mapping program.